Acta Biomed 2019; Vol. 90, Supplement 9: 15-20 DOI: 10.23750/abm.v90i9-S.8696

Original article

The accreditation system of Italian medical residency programs: fostering quality and sustainability of the National Health Service

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Summary. *Background and aim:* In June 2017, University and Health Ministries jointly enacted a decree implementing a new accreditation system for the Italian post-graduate medical schools (residency programs). We report the innovations introduced through the reform. *Methods:* Universities were called to submit post-graduate medical school projects to the National Observatory on medical residency programs, the inter-institutional committee responsible for the entire accreditation process, through an interactive web platform. The adherence to minimum standards, requirements and the performances were measured. After this first assessment, universities were asked to provide programs of improvement for critical schools. At the end of the evaluation, residency schools were proposed for a full or a partial accreditation. *Results:* Of the 1,431 post-graduate medical school projects submitted to the National Observatory by 37 public and 4 private Universities, 672 (47.0%) obtained a full accreditation, 629 (43.9%) a partial accreditation, with a gap to be filled within a two-year period according to a specific improvement programme, while 130 (9.1%) were not accredited. Further, 1,254 out of the 1,301 schools with a full or partial accreditation were activated according to the available public financial resources, excluding those performing the lowest. Annual surveys were in place to investigate the residents' level of satisfaction concerning the quality of the training programs. The National Observatory further developed an experimental methodology to conduct on-site visits to support quality improvement. *Conclusions:* This reform can be considered an important initiative to guarantee high standards in the quality of care and to face the challenge of sustainability for the National Health System. (www.actabiomedica.it)

Key words: Post-graduate medical education and training; residency programs; continuous quality improvement; standards and requirements; sustainability in healthcare; National Health System

Abbreviations:
MIUR: University and Research Ministry
NHS: National Health System
ANVUR: Agency for the Italian university system evaluation
AGENAS: Agency for regional health services

Background and aim

European Union has called member states to update educational standards and requirements needed to train physicians at the best level at the era of the cross-border healthcare in Europe (1). At the same time, national and international health authorities have underlined the importance of investing in public health policies to face the challenge of health systems' sustainability, which is undermined by populations' ageing and increased burden of preventable chronic diseases (2,3), impact of innovation in healthcare, related increasingly healthcare costs and ongoing financial crisis (4). These

all are drivers that should be taken into account by every medical education and training system (5).

Since the nineteen-eighties, post-graduate medical education in Italy has been provided by universities through residency programs, under the supervision of the University and Research Ministry (MIUR) (6). Although specialised physicians were trained to work for the National Health System (NHS), the role of national and regional health authorities was limited to answer the NHS's demand for health professionals by drawing up the health workforce plans, and to provide public financial support for the training contracts of about 25,000 medical residents.

In June 2017, MIUR and Health Ministry jointly enacted a decree implementing a new accreditation system for the post-graduate medical schools (residency programs) (7). This initiative followed the core curriculum revision for the 50 different typologies of post-graduate medical schools (Table 1) providing the residency programs (8).

The accreditation decree established three fundamental principles: first, implementation of a continuous quality improvement system, including i) the monitoring of every single structure as to adhere to minimum standards exploring different dimensions (structural, organizational, technological, healthcare), and ii) the adoption of a quality management system to register the educational and training activities dedicated to the residents, including clinical and surgical procedures, and to certificate knowledge, skills, and attitudes achieved by every single resident at the end of the training; second, the development of networks of training structures, including primary care facilities, meeting the minimum general and specific requirements (structural, organizational, technological defined per each health specialty discipline) introduced by the decree; and, lastly, the involvement of all the actors and the stakeholders (i.e. academics, professionals, scientific societies, junior doctors' associations and citizens' associations) in the reform developmental process and its future evolution.

We describe the main innovations introduced in the Italian post-graduate medical education and training system through a reform, based on a continuous quality improvement approach, implementing the new accreditation system of medical residency programs.

Methods

The entire accreditation process was up to the National Observatory on medical residency programs (National Observatory), the inter-institutional committee charged with the designing of the reform route and responsible for the continuously monitoring of standards and requirements to be met by every post-graduate medical school.

Health training facilities and services composing the training networks have been classified in main structure (directed by an academic role), associate (of the same specialty as the main one) and complementary (of a different discipline integrating the contribution of knowledge and skills by the future specialist). Interestingly, the decree stated the possibility to implement the training with elective programmes to be held both in national and international ranked highly qualified healthcare institutions or research centres, also in order to satisfy a demand for international experiences documented among Italian medical residents (9).

The continuous quality improvement system included the monitoring of every single structure as to adhere to the minimum standards exploring different dimensions as well as the development of networks of training structures, including primary care facilities, meeting the minimum general and specific requirements introduced by the decree. The adherence to standards and requirement was then measured. Furthermore, a set of indicators designed to measure healthcare and teaching performances was defined and then adopted in collaboration with the Agency for the Italian university system evaluation (ANVUR) and the national Agency for regional health services (AGENAS), respectively.

Universities were called to submit post-graduate medical school projects to the National Observatory through an interactive web platform. The adherence to minimum standards, requirements and the performances were then measured. After this first assessment, universities were asked to provide programs of improvement for critical schools. At the end of the evaluation, residency schools were proposed for a full or a partial accreditation. Schools projects were not accredited as a third option. According to the implemented continuous quality improvement approach,

the post-graduate medical schools with partial accreditation and not meeting the minimum standards and requirements, at the end of a three years period, will be deactivated, thus realizing an effective rationalization of the residency programs.

Furthermore, the National Observatory has developed an experimental methodology to conduct on-site visits and a structured questionnaire to survey the residents' opinion on the quality of the training. The adoption of a quality management system to register the educational and training activities dedicated to the residents, including clinical and surgical procedures, and to certificate knowledge, skills, and attitudes achieved by every single resident at the end of the training, has been also required to be implemented in a three year period.

Results

We report the results of the first step of accreditation, corresponding to the first year of a three years accreditation cycle.

In the global evaluation of the 1,431 post-graduate medical school proposals, submitted by 37 public and 4 private Universities, the National Observatory included the measurements of adherence to standards and requirement as well as of the healthcare and teaching performances scores provided by the two mentioned national Agencies.

Six hundred seventy-two (47.0%) post-graduate medical school proposals obtained a full accreditation, 629 (43.9%) a partial accreditation, with a gap to be filled in the next two years by providing outcomes consistent with the specific improvement programmes approved by the National Observatory, while 130 (9.1%) were not accredited (Table 1).

The accreditation status of the n. 1,431 post-graduate Italian medical school proposals by residency program is reported in Table 1.

Further, 1,254 out of the 1,301 schools with a full or partial accreditation were activated according to the available public financial resources, excluding those performing the lowest.

On-site visits, conducted by the Regional Observatories on behalf of the Regional Health Authorities or by the National Observatory in demand, are ongoing to verify quality improvement documented by the residency programs.

Moreover, annual surveys have been planned to be annually administered to investigate the residents' level of satisfaction concerning the integrated training system.

Conclusions

A new academic leadership was supported by a strong political, social and professional endorsement, and was addressed to the accreditation reform implementation, bridging together universities and NHS in order to overcome the existing dichotomy in the training process. In that direction, the renewal of post-graduate medical training must be considered an important initiative both to face the challenge of mobility of medical doctors in the European Union cross-border healthcare and to recognise the increasing demand for integrated, patient-centred and inter-professional education, which is mandatory to guarantee the sustainability of every NHS (10,11).

In this perspective, the role of a new generation of high qualified professionals, trained to face the challenge of implementing innovative technologies in healthcare while promoting the culture of quality and safety in healthcare, as well as the *value-based* and the *population-based* approaches, is increasingly recognized (12,13,14). Moreover, to shape a culture of stewardship and the value of leadership in healthcare all the stakeholders in higher medical education must rely on solid accreditation approach and, among them, are not only medical residents and patients, but also the general public and institutions (15). Accreditation should assure that public interest is respected, and particularly in relation to investments: public has a right to know more about quality of care, starting from the evidence that the credentials conferred by institutions are of the highest quality and that the education process tends to meet the standards of excellence (16).

Unfortunately, policy-makers missed the opportunity to include the general practitioners post-graduate training within the reform, as the proposal to evolve regional professional programs into general practice

Table 1. Accreditation status of the n. 1,431 post-graduate Italian medical school proposals, by residency program, submitted to the National Observatory on Residency Programs

Residency Programs		Accreditation Proposal n.	Full Accreditation n. (%)	Partial Accreditation n. (%)	No Accreditation n. (%)
1	**Allergology and Clinic Immunology**	**24**	11 (46)	11 (46)	2 (8)
2	**Anatomic-pathology and Histopathology**	**31**	3 (10)	23 (74)	5 (16)
3	**Anaesthesia**	**40**	17 (42.5)	21 (52.5)	2 (5)
4	**Audiology and Phoniatrics**	**14**	4 (29)	4 (29)	6 (42)
5	**Cardiac Surgery**	**23**	9 (39)	13 (57)	1 (4)
6	**General Surgery**	**41**	22 (54)	18 (44)	1 (2)
7	**Maxillo-facial Surgery**	**13**	2 (15)	7 (54)	4 (31)
8	**Paediatric Surgery**	**16**	2 (12)	7 (44)	7 (44)
9	**Plastic Surgery**	**24**	10 (42)	13 (54)	1 (4)
10	**Thoracic Surgery**	**23**	6 (26)	10 (44)	7 (30)
11	**Vascular Surgery**	**24**	4 (17)	18 (75)	2 (8)
12	**Dermatology and Venereology**	**28**	13 (46)	14 (50)	1 (4)
13	**Haematology**	**32**	14 (44)	16 (50)	2 (6)
14	**Endocrinology and Metabolic Diseases**	**34**	15 (44)	17 (50)	2 (6)
15	**Clinical Pharmacology**	**22**	9 (41)	5 (23)	8 (36)
16	**Medical Genetics**	**24**	12 (50)	7 (29)	5 (21)
17	**Geriatrics**	**36**	24 (67)	11 (30)	1 (3)
18	**Obstetrics and Gynaecology**	**41**	22 (54)	17 (41)	2 (5)
19	**Public Health and Preventive Medicine**	**38**	26 (69)	10 (26)	2 (5)
20	**Cardiology**	**40**	14 (35)	25 (62.5)	1 (2.5)
21	**Gastro-enterology**	**31**	20 (65)	9 (29)	2 (6)
22	**Respiratory Medicine**	**28**	13 (46)	14 (50)	1 (4)
23	**Communicable and Tropical Diseases**	**31**	14 (45)	17 (55)	0 (0)
24	**Emergency Medicine**	**34**	22 (65)	11 (32)	1 (3)
25	**Occupational Medicine**	**30**	11 (36)	16 (53)	3 (1)
26	**Sports Medicine**	**24**	12 (50)	10 (42)	2 (8)
27	**Physiatry and Physical Medicine**	**29**	6 (21)	20 (69)	3 (10)
28	**Internal Medicine**	**41**	27 (66)	14 (34)	0 (0)
29	**Legal Medicine**	**28**	14 (50)	7 (25)	7 (25)
30	**Nuclear Medicine**	**18**	13 (72)	5 (28)	0 (0)
31	**Thermal Medicine**	**5**	2 (40)	0 (0)	3 (60)
32	**Microbiology**	**29**	21 (73)	7 (24)	1 (3)
33	**Nephrology**	**29**	14 (48)	12 (41)	3 (11)
34	**Neuro-surgery**	**27**	10 (37)	11 (41)	6 (22)
35	**Neurology**	**39**	21 (54)	15 (38)	3 (8)
36	**Infant and adolescent Neuro-psychiatry**	**25**	4 (16)	18 (72)	3 (12)
37	**Ophthalmology**	**38**	14 (37)	21 (55)	3 (8)
38	**Clinical Oncology**	**34**	16 (47)	16 (47)	2 (6)
39	**Orthopaedic Surgery**	**41**	13 (32)	24 (58)	4 (10)
40	**Otolaryngology**	**34**	17 (50)	15 (44)	2 (6)
41	**Biochemistry and Lab Pathology**	**35**	24 (68)	8 (23)	3 (9)
42	**Paediatrics**	**37**	25 (67)	11 (30)	1 (3)
43	**Psychiatry**	**36**	14 (39)	20 (55.5)	2 (5.5)
44	**Radiology**	**41**	25 (61)	16 (39)	0 (0)
45	**Radiotherapy**	**26**	18 (69)	6 (23)	2 (8)
46	**Rheumatology**	**24**	6 (25)	17 (71)	1 (4)
47	**Nutrition Science**	**19**	13 (68)	3 (16)	3 (16)
48	**Health Statistics and Biometrics**	**13**	4 (31)	3 (23)	6 (46)
49	**Urology**	**32**	16 (50)	13 (41)	3 (9)
50	**Community Medicine and Primary Care**	**5**	4 (80)	1 (20)	0 (0)
	Total (%)	**1431 (100.0)**	672 (47.0)	629 (43.9)	130 (9.1)

and primary care post-graduate medical schools still remains in the political agenda.

Next step for the future is to improve transparency and accountability throughout the process by publishing the accreditation results so as to foster the academic social accountability in order to meet the demanding and pressing health care needs of society (17).

Acknowledgements

Authors would like to thank the University and Research Ministry and the Health Ministry for the strong political support and the Italian Agency for the university system evaluation (ANVUR) and the Italian Agency for regional health services (Age.Na.S.) for the technical support given to the reform conception and development. Authors are also grateful to all the members of the National Observatory on medical residency programs for the constant effort provided to the reform implementation.

Authors' contributions: All individuals listed as authors have contributed to the study. Conception of the study: WM, RV. Manuscript writing and drafting: WM, AS, RV. Revision of the manuscript: WM, AS, MG, RV. Approval of the final version of the manuscript: WM, RB, AS, MG. The document has been reviewed and corrected by a native English speaker with extensive scientific editorial experience to ensure a high level of spelling, grammar and punctuation.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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Received: 15 June 2019
Accepted: 18 July 2019
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